STS-129/ULF 3 Post-Mission Summary

NWS Spaceflight Meteorology Group

The Space Shuttle Atlantis with the STS-129 crew blasted into space from Kennedy Space Center (KSC) Launch Pad 39A on November 16, 2009 at 1928Z. Commander Charlie Hobaugh and the crew delivered spare parts to the International Space Station (ISS). These parts will be needed to maintain and operate the ISS after the retirement of the Space Shuttles in about a year. The mission culminated in a landing at Kennedy Space Center (KSC) on November 27th, 2009 at 1444Z. Astronaut Nicole Stott returned to Earth after 91 days in space acting as Flight Engineer for ISS Expeditions 20 and 21. STS-129 was the first mission to launch on-time and land on the first opportunity at KSC since STS-124 in June 2008. This was also the final mission for ISS crew-members to be transported to, or from, the Space Station on a Space Shuttle. All future ISS expedition crew members will launch and land in the Russian Soyuz spacecraft.

Weather on launch day caused a couple minor issues at a back-up Transoceanic Abort Landing (TAL) site at Istres, France and at KSC. Weather conditions at Zaragoza, the prime TAL site, and Moron were observed and forecast acceptable throughout the countdown. However, a cloud ceiling developed at Istres 2 hours prior to launch limiting the use of that landing site. Weather at KSC for launch time was predicted to be acceptable in the days leading up to launch and throughout the launch count. A cloud ceiling below 5000 feet developed early on the morning of launch, violating flight rule limits. The ceiling lifted to above flight rule limits about 5 hours prior to launch, but continued to violate US Air Force Range Safety cloud criteria. Astronaut Steve Lindsey, flying weather reconnaissance, provided measurements of the cloud thickness for the 45th Space Wing's Launch Weather Officer and found the thickness to be acceptable about 3 hours prior to launch. Conditions continued to remain favorable throughout the remainder of the launch countdown and Atlantis lifted off on-time for its rendezvous with the Space Station.

After a successful 11-day mission including 3 spacewalks, Atlantis landed November 27th at 1444Z on the first landing opportunity at KSC under widely scattered cirrus clouds. Although the entry weather team monitored strong winds at 500 feet throughout the landing countdown, the surface winds were consistently observed and forecast within limits and the weather team was able to give a confident "GO" for landing.

Tim Oram was the STS-129 lead forecaster (58th mission supported, 4th as lead forecaster) with Brian Hoeth as the TAL forecaster and assistant lead (19th mission overall). Paul Wahner was Lead Techniques Development Unit Meteorologist (7th mission, 2nd as lead TDU).